A. Cover Sheet

1. Specify: ☒ agricultural project or ☐ urban project ☒ individual application or ☐ joint application

2. Proposal title—concise but descriptive: GCID System Optimization for Fisheries, Waterfowl Habitat, and Delivery System Efficiency to Address Quantifiable Objectives 13, 20, 27, 30, and 35

3. Principal applicant—organization or affiliation: Glenn-Colusa Irrigation District

4. Contact—name, title: O.L. "Van" Tenney, General Manager

5. Mailing address: P.O. Box 150, Willows, CA 95988

6. Telephone: 530/934-8881

7. Fax: 530/934-3287

8. E-mail: vtenney@gcid.net

9. Funds requested—dollar amount: $1,111,000

10. Applicant cost share funds pledged—dollar amount: $211,000

11. Duration—(month/year to month/year): October 2001 to June 2003

12. State Assembly and Senate districts and Congressional district(s) where the project is to be conducted:

State Assembly District 2 (Richard Dickerson);

State Senate District 4 (K. Maurice Johannessen); Congressional District 3 (Doug Ose)

13. Location and geographic boundaries of the project: The project is located in the Colusa Basin Watershed in portions of lower Tehama County, and easterly half of Glenn, Colusa, and Yolo counties. This area represents a portion CALFED QO Sub-Regions 2, 3, and 4.

14. Name and signature of official representing applicant. By signing below, the applicant declares the following:
— the truthfulness of all representations in this proposal;
— the individual signing the form is authorized to submit the application on behalf of the applicant;
— the applicant will comply with contract terms and conditions identified in Section 11 of this PSP.

_____ _____
(printed name of applicant) *(date)*

_____
(signature of applicant)

B. Scope of Work

Relevance and Importance

1. Abstract (Executive Summary).

Project Description: One of **CALFED's target goals, highlighted in Detail 13 of the Quantifiable Objectives, is to reduce critical- or dry-period diversions at the Glenn-Colusa Irrigation District (GCID) intake from the Sacramento River by 951.0 acre feet. GCID shares this goal,** and the purpose of this effort is to support attainment of this objective. **GCID's primary goals** for this feasibility study are to (1) **develop a project to significantly reduce the District's diversion from the Sacramento River during March, April, and May; (**2) **provide flexibility to increase the District's water supply for beneficial uses;** and (3) **provide instream flow to improve aquatic ecosystem conditions.** These primary goals would be achieved by reducing instream diversions from the Sacramento River and Delta during critical fish migration periods and making more efficient use of the District's drainage flows both within and outside the District. The project is a study to evaluate the technical and economic feasibility of developing three offstream water storage/regulating facilities and associated conveyance systems, along with conjunctive use of groundwater with recharge and extraction capabilities.

This project will address Quantifiable Objectives 13, 20, 27, 30, and 35 by providing flow to **improve aquatic ecosystem conditions and by providing long-term diversion flexibility to increase the water supply for beneficial uses**. Project water-quality improvements, including reduced contaminants and salinity, would directly benefit downstream water users, anadromous fish, and other aquatic species. Equalizing Colusa Basin Drain (CBD) pulse flows, which act as attraction flows to anadromous fish, would reduce entrainment of potential adult spawners into CBD. The reservoirs would provide additional supply of stored water for rice straw decomposition in the fall, reducing river demands during October, November, and December, and enhancing wetland habitat for migratory waterfowl and other wetland and aquatic species.

The proposed project consists of three components: (1) upstream regulating/storage/recharge basin and conveyance facilities, recharge facilities, and groundwater extraction facilities between Hamilton City and Orland; (2) a regulating reservoir and conveyance facilities located east of Maxwell to store and regulate drainwater discharge; and (3) a regulating reservoir and conveyance facilities located near the Davis Weir on CBD. The upstream project component will provide some surface storage to reduce peak flows through the GCID Main Canal Pump Station fish screens, conveyance and storage facilities to store Sacramento River water in the Stony Creek Groundwater Basin in the winter, and ability to extract the stored water during the spring/summer irrigation season. Project components 2 and 3 will be used to store drainwater, reduce peak drain outflows, improve water quality by blending, and allow more efficient reuse of drain flows.

Project Methods: The study will be performed under the following tasks:

- Task 1 – Contract Management and Administration
- Task 2 – Collect Existing Data, Reports, Mapping, and Other Information
- Task 3 – Coordinate with Other Studies and Groundwater Models
- Task 4 – Develop Project Alternatives
- Task 5 – Evaluate Alternatives
- Task 6 – Prepare Implementation Schedule
- Task 7 – Develop Cost Estimates
- Task 8 – Legal/Regulatory/Permitting Requirements
- Task 9 – Feasibility Report

The District must take an action-specific approach to determine how much water can be recharged between June and September and extracted at the start of the irrigation season. They must also determine the amount of drainwater that can be recaptured. The proposed study would enable the District to more accurately quantify the flow that can be provided to the Sacramento River/Delta system to improve aquatic ecosystem conditions. The success of this project, as well as the drainage component of the project, would be enhanced through cooperative efforts between the District and adjacent districts and landowners.

Project Objectives: The project objective seeks to optimize and integrate all water supplies and reduce annual Sacramento River diversions and peak diversions during March, April, May, October, November, and December through conjunctive use of groundwater, surface supply, and drainwater. This would result in a more secure, reliable, and flexible water supply for the GCID and neighboring districts. The project would reduce diversion from the Sacramento River (CALFED Quantifiable Objectives 13, 20, and 30) and provide long-term diversion flexibility to increase the water supply for beneficial uses (CALFED Quantifiable Objectives 25 and 35).

2. Statement of critical local, regional, Bay-Delta, State, or federal water issues, which includes an explanation of the need for the project, who wants it, and why.

The key CALFED issue is to optimize and integrate all water supplies to reduce annual Sacramento River diversions and peak diversions during March, April, May, October, November, and December through conjunctive use of groundwater, surface supply, and drainwater. GCID wants to optimize its available water supply and improve water quality to promote CALFED goals of fish, wildlife, and habitat enhancement and restoration. GCID delivers water to 175,000 acres in Glenn and Colusa counties, including 20,000 acres of wildlife refuges.

The proposed program is an outgrowth of the ongoing Sacramento River Basinwide Water Management Plan (BWMP) being developed by the Sacramento Valley Settlement Contractors in cooperation with the California Department of Water Resources (DWR) and U.S. Bureau of Reclamation (Reclamation). The proposed project supports the objectives of the BWMP, including providing sustainable water supplies across the Sacramento River basin, maximizing environmental benefits, and enhancing partnership opportunities. The proposed program would also support activities identified in the proposed agreement related to the resolution of Phase 8 of the State Water Resources Control Board (SWRCB) Bay-Delta Water Rights Hearings, which specifically identifies the BWMP as a "model" to follow across the entire Sacramento Valley.

GCID has long been involved in state and federal programs that promote CALFED objectives and has support from a variety of local agencies, landowners, and other stakeholder groups. The fish screen project(s) and refuge water supply projects, developed in cooperation with state and federal agencies with state and federal funding, directly benefit anadromous fish and provide wetlands enhancement. Other CALFED-compatible programs that GCID participates in include the Stony Creek Task Force, BDAC, SB 1086, Sacramento River Watershed Planning, Inland Surface Water Plan, AB 3616, AB 3030, the potential Glenn County Water Management Model and Conservation Plan, and Tehama-Colusa Canal Authority (TCCA) supply proposals. All of these programs have the ability to provide information that could contribute to the proposed project. This information could contribute to developing the BWMP and a conjunctive use plan. Potential project supporters and collaborators include California Department of Fish and Game (CDFG), U.S. Fish and Wildlife Service (USFWS), Reclamation, Regional Water Quality Control Board (RWQCB), DWR, TCCA, Orland Unit Water Users' Association, Glenn and Colusa counties, Reclamation District 2047, Princeton-Codora-Glenn Irrigation District, Provident Irrigation District, Maxwell Irrigation District, and other basin water users.

3. Nature, scope, and objectives of the project.

Project Objectives: The primary objectives include improving system efficiency, resulting in a larger and more secure water supply, which would improve water quality to benefit aquatic species and habitats and create and restore wetlands habitat for migratory waterfowl and other wildlife. Project water quality improvements would directly benefit anadromous fish and other aquatic species. Equalizing CBD pulse flows, which act as attraction flows to anadromous fish, would reduce entrainment of potential adult spawners into CBD. Releases of stored water and use of groundwater during fall, winter, and early spring would enable the District to reduce flows through the GCID MPS fish screens when migrating salmon are present in fall and winter, thereby reducing juvenile fish exposure to the screens. The reservoirs would provide additional water for rice straw decomposition and enhanced wetland habitat for migratory waterfowl and other wetland and aquatic species. This project would address Quantifiable Objectives 13, 20, 27, 30, and 35 by providing flow to improve aquatic ecosystem conditions and long-term diversion flexibility to increase the water supply for beneficial uses.

Project Scope: The scope of this project includes identifying the necessary facilities including reservoirs, conveyance facilities, and well fields, and determining how these facilities will operate to achieve the project objectives. The proposed tasks are listed below.

Task 1—Contract Management and Administration: This task includes managing project costs and schedule; administering grant funds; developing work plans; coordinating with other initiatives and agencies; attending meetings with agencies, landowners, and other districts; coordinating and overseeing the activities of the project team; communicating with agency staff; and providing financial and technical reports to CALFED. The applicant would prepare monthly reports summarizing the degree of completion, activities during the reporting period, costs incurred, and major upcoming milestones.

Task 2—Collect Existing Data, Reports, Mapping, and Other Information: Review existing reports, data, mapping, water rights, and other related information, generated by DWR, Reclamation, and other federal, state, and local agencies, regarding Stony Creek water supply, groundwater basin, and CBD. The review of Stony Creek groundwater basin would also include land ownership, geotechnical data, and the location and yield of existing wells. GCID would compile water quality and flow data on its Sacramento River diversion and drain system. Other needed information includes water quality data in CBD and other areas of potential discharge.

Task 3—Coordinate with Other Studies and Groundwater Models: Various projects concerning the groundwater development within Glenn County have been proposed by others. Among these is included the development of a computer model of the Stony Creek aquifer to develop a water plan that would identify optimum uses for the amount of water available. Under CALFED and other state and federal programs, future studies may include the GCID service area, such as CBD water quality and quantity, and fish barriers on the CBD. In addition, DWR, Reclamation, and other agencies may review the need for offstream storage that may require the use of District lands or facilities. The District would coordinate with other agencies and programs to implement the project.

Task 4—Develop Project Alternatives: GCID would develop alternatives for each, storing water in the upper, middle, and lower parts of the District. This would involve determining the types of facility components needed, such as drainwater return and water supply pump stations, pipelines or canals, flow regulation reservoirs, flow and water quality monitoring facilities, spreading basins, inlet/outlet structures, and other canal structures.

Each component would be sized for various flow criteria and multiple uses, where appropriate, and the degree of water quality enhancement obtainable. Technical Memoranda Nos. 1, 2, and 3 would be prepared under this task and would include all data compiled in Tasks 2 through 4.

Task 5—Evaluate Alternatives: Each alternative would be evaluated against the following criteria and other criteria to be developed:

- Overall ecological benefits
- How the system would be operated
- Flexibility in providing water within and outside the District
- Compatibility with the rice decomposition program and winter waterfowl habitat programs
- Water quality improvement, including salinity
- Reduction of peak flows and resulting approach velocities at the District's MPS fish screens during the quantified flow target periods of March, April, May, October, November, and December when fall-run, spring-run, and winter-run chinook salmon juveniles are present
- Reduction of pulse flows in CBD
- Reduction in drainwater leaving the District
- Creation of "new" water and its disposition
- Third-party impacts
- Water rights impacts
- Ability to permit

Each of the alternatives would be evaluated for its ability to improve conditions for fish and wildlife, compatibility with the District's existing systems, and its ability to meet other goals of the project. A "No Project Alternative" would also be included in the evaluation. "Order of Magnitude" cost estimates would be prepared for the apparently viable alternatives. The best alternative or "No Project Alternative" would be selected for each of the three proposed reservoir sites, spreading basins, and pumping facilities.

Task 6—Prepare Implementation Schedule: An implementation schedule would be prepared for the selected alternative that would include the development of additional studies required to verify project size and types of components, preliminary design, final design, environmental documentation, permitting, and construction.

Task 7—Develop Cost Estimates: Capital cost and operational and maintenance costs would be estimated. A benefit-cost estimate would be prepared, and funding alternatives would be evaluated.

Task 8—Legal/Regulatory/Permitting Requirements: The Proposal Solicitation Package (page 13, Item H) states that permitting and environmental documentation requirements must be met prior to funding disbursement. This proposal is for the first phase, Feasibility Study, of a phased project that includes environmental documentation and permitting as project Task 8. In Task 8, GCID would identify project permit requirements and the appropriate level of National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) environmental documentation that would be required for the project to be constructed. The NEPA/CEQA documentation may be tiered off the CALFED Programmatic Environmental Impact Statement/ Environmental Impact Report (EIS/EIR) and incorporate appropriate mitigation measures from the CALFED Record of Decision. The permitting requirements and appropriate level of NEPA/CEQA documentation (i.e., Environmental Assessment/Initial Study [EA/IS] versus EIS/EIR) cannot be definitively identified until feasibility studies are completed and preliminary design is underway during a subsequent project phase. GCID proposes that all necessary permits identified during Phase 1 would be acquired, and environmental documentation would be completed during the design phase, prior to initiation of construction. Funding of the feasibility study and the subsequent

design phase would, therefore, culminate in completion of the environmental documentation and permitting requirements before construction would be initiated.

Task 9—Prepare Feasibility Report: GCID would prepare a draft report, distribute it to the public, conduct public hearings to address written and verbal comments, and prepare a final report for public distribution. This report would be available for reference for other studies by CALFED and other funding programs.

Technical/Scientific Merit, Feasibility, Monitoring, and Assessment

4. Methods, procedures, and facilities.

Methods: The objectives of this project are to reduce diversion from the Sacramento River (CALFED Quantifiable Objectives 13, 20, and 30) and provide long-term diversion flexibility to increase the water supply for beneficial uses (CALFED Quantifiable Objectives 27 and 35). This project would identify proposed actions and provide a rough estimate of the corresponding contribution towards a quantifiable objective. The project's components, costs, right-of-way requirements, partners (if any), and benefits cannot currently be specifically identified. The objectives of this study are to develop these specific details, using the first specific approach in Phase 1, Pre-design, and the quantifiable approach in subsequent phases.

The action-specific approach to achieving these goals would be to conceptually develop the three reservoirs and associated conveyance facilities and incorporate conjunctive use of groundwater by designing a groundwater extraction and recharge system in the Stony Creek Groundwater Basin. The proposed feasibility study would be a necessary step in developing these facilities. Information that the feasibility study would provide includes the total surface-water supply, including the District's water rights and potentially recaptured peak flows from CBD, as well as potential groundwater supplies. Drain flow volume, groundwater elevation, and hydrologic data would be compiled and evaluated. Various storage and conveyance facility alternatives would be evaluated. The three storage/regulation facilities, associated components, and operating characteristics are described below.

Procedures: The study would evaluate the feasibility of developing three offstream water storage/ regulating facilities and associated conveyance systems, along with conjunctive use of groundwater with recharge and extraction capabilities to optimize beneficial uses of GCID's water resources.

Any seasonal excesses of diverted water and excess peak drainage flows from CBD could be pumped to the proposed reservoirs and stored for future releases during critical times of the year. This study would determine how much additional water supply could be developed, how much surface supply could be freed up in the Sacramento River, the optimal timing to diverting specific quantities of river water, water demands, water quality of discharged drainwater, blending of water sources, and other benefits. Alternatives would be developed and screened; and flexibility and reliability, capital costs, operational scenarios and costs, and institutional issues would be addressed.

Facilities: The various project components would include regulating and storage basins, spreading basins, pump stations and pipelines, extraction wells, monitoring systems, and related facilities. The proposed facilities for each of the three projects are described below.

The most **upstream proposed project** would consist of the following project components: 200- to 600-cubic feet per second (cfs) pump station located in the GCID Main Pump Station Forebay, a 6- to 9-foot diameter pipeline, a regulating/storage/recharge reservoir, additional recharge basins along Stony Creek and within the Stony Creek Groundwater Basin, a series of extraction wells, and tie-ins to existing pressure distribution systems to allow incorporation of existing wells into the system. The storage regulating facility would be located north of Highway 32, between the GCID

Canal and the TCCA Canal. In addition, flow measurement and water quality monitoring facilities would be at various system locations to measure flows into and out of the system.

Water would be pumped from the District's MPS forebay to a regulating/recharge reservoir. The upstream regulating/recharge reservoir and associated facilities would include a pump station and pipelines to convey water from the reservoir to other recharge basins within the Stony Creek Groundwater Basin. The reservoir and recharge basins would be filled with surplus water diverted at the MPS. This stored groundwater would be extracted from a series of wells along the GCID Main Canal for beneficial uses.

The **mid-system (Maxwell) regulating reservoir** facilities would include flow volume and water quality monitoring instrumentation, and pump stations to pump waters tributary to CBD to the reservoir and from the reservoir to the District's main canal. The facility would also be used as a peaking reservoir in the spring and fall to store excess drainwater. This reservoir and conveyance system would recapture drainwater and other surface runoff for various beneficial uses. The mid-system reservoir would also reduce uncontrolled drain outflows and peak flows, improve water quality by serving as a sediment catch basin, enhance water conservation and overall system efficiency, reduce deliveries at the District's MPS (thereby reducing some of the need to divert Sacramento River Water), and create wetlands and waterfowl habitat in and around the new reservoir. A key benefit of this reservoir would be to transfer stored water to wildlife refuges and rice decomposition fields to reduce diversion from the Sacramento River in the fall. The size of the reservoir would be between 10,000 and 25,000 acre-feet.

The **downstream (Davis) regulating reservoir** facilities would include a pump station on CBD, improvements to the existing lateral canal from the District's main canal, a CBD bypass, an outlet control system, and water quality and flow volume monitoring instrumentation. Water would be conveyed to the reservoir by gravity flow and pumping from CBD, and by gravity flow from the District's main canal. Water from these sources could be blended. The reservoir would help regulate peak flows from CBD and equalize the year-round flow to provide more assurance to basin users of adequate water supply. Reducing peak flows would reduce attraction flows and anadromous fish entrainment into CBD. Entrainment occurs at the Knight's Landing CBD outfall upstream of Sacramento. Other benefits of the lower regulating reservoir include improved water quality, created waterfowl and wetlands habitat in the new reservoir, improved water conservation, and enhanced system efficiency.

Technical and Scientific Merit of Approach: Among project objectives are to optimize use of the District's water resources; level CBD peak flows (which would reduce pulse flows that attract and entrain anadromous fish); improve water quality, reduce flows at the MPS at times when juvenile fish are present; and initiate conjunctive use of allocated surface water, recaptured drainwater, and managed groundwater resources.

The feasibility study would address portions of a larger watershed management program. The program includes the fish screen, a conservation program, a conjunctive use program, groundwater basin exploration, the rice straw decomposition program, baseline fish passage studies, the Central Valley Project Improvement Act (CVPIA) Anadromous Fishery Restoration Program (AFRP), and the wildlife refuge year-round water supply conveyance program. The fish screen and refuge conveyance projects used state and federal funding, some of which was authorized under the CVPIA. To date, GCID has committed to cost-share in the $20 million refuge water supply program and has advanced nearly $9 million of District funds to the $70 million fish screen project. Partners in the fish screen project include CDFG, Reclamation, DWR, the U.S. Army Corps of Engineers (Corps), USFWS, and National Marine Fisheries Service (NMFS).

The District participates in the following programs that promote habitat restoration or support other CALFED programs: BWMP, Stony Creek Task Force, SB 1086, Sacramento River Watershed Planning, Inland Surface Water Plan, AB 3616, AB 3030, BDAC, a potential Glenn County Water Management Model and Conservation Plan, and TCCA water supply/storage proposals.

The proposed regulating reservoir system, along with the interrelated projects and programs listed above, would contribute to safe fish passage within and adjacent to the GCID irrigation system and the ability of the District to provide year-round, secure water conveyance to the wildlife refuges and other water users. Completion of the fish screen project will enable the District to divert its entire water supply, and the proposed reservoir project would contribute to optimizing efficiency of the District's system. The regulating reservoirs would provide:

- Equalization of CBD pulse flows
- Reduced entrainment of all four anadromous salmonid runs
- Conjunctive use of recaptured pulse flows, groundwater, and surface water
- Increased year-round conveyance capabilities for the refuges and rice straw decomposition flooding
- Catch-basins for trapping sediment and reducing salinity and other contaminants
- Constructed wetland habitat in the new reservoirs

5. Schedule.

Bar Chart Schedule: The proposed project schedule and quarterly expenditure projection per quarter are shown below. The pre-design effort would be scheduled to commence January 2002 with the Final Pre-design Report delivered to CALFED June 2003. The allocation of costs per task is shown in Table 1.

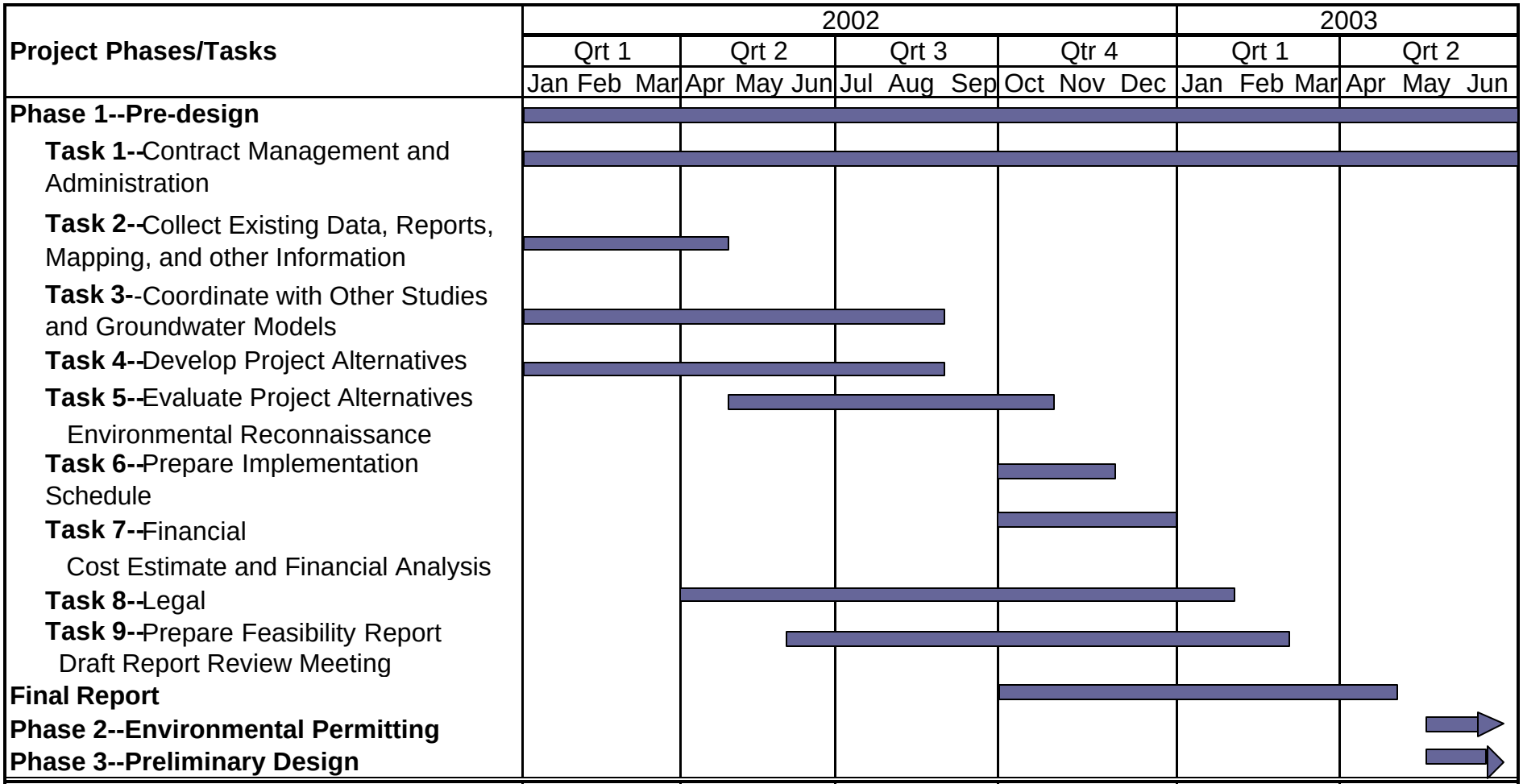
6. Monitoring and assessment procedures.

Progress toward the QO would be measured against a detailed workplan that would be developed for the project. Each task would be separated into various subtasks, each with a cost and deliver-ables. An action item list would be initially prepared and monitored throughout the project and would be addressed at each progress meeting, to be held a minimum of each month.

An early task in the proposed project would be to compile existing water quality data on CBD and groundwater elevations in the Stony Creek Fan. Where sufficient data are unavailable, monitoring would occur during the project. If additional monitoring wells are needed (their cost is not included in the budget for the proposed project), GCID would coordinate with other agencies that might install wells to share groundwater elevation data.

The development of a Districtwide watershed management program that includes flow and water quality monitoring capabilities would contribute to the overall management of the Sacramento-San Joaquin basin for beneficial uses, including habitat restoration.

Task 8 of the proposed feasibility study for the reservoirs is to identify all legal and regulatory issues that would affect project implementation. The cost of compliance and mitigation is not included in this proposal. Development of the three reservoirs and associated components would require compliance with CEQA and possibly NEPA, particularly if federal funding is involved. CEQA and NEPA compliance, in turn, require consideration of the state and federal Endangered Species Acts and laws and regulations regulating treatment of cultural resources. If wetlands are potentially affected by the reservoir projects, Section 404 of the Clean Water Act would apply, which would require wetland delineation and an impact mitigation plan to be overseen by the Corps. Under Section 404, Section 106 of the National Historic Preservation Act also would apply, which would ensure prescribed treatment of affected cultural resources.



Monthly Costs	$45,245	$48,864	$54,294	$54,294	$63,342	$72,391	$76,011	$90,489	$90,489	$90,489	$85,060	$81,440	$99,538	$99,538	$99,538	$81,440	$63,342	$36,196
Quarterly Costs	$148,403			$190,027			$256,989			$256,989			$298,614			$180,978		
Accumulative Total	$148,403			$338,430			$595,419			$852,408			$1,151,022			$1,332,000		

TABLE 1
Allocation of Costs by Task

Task No.	Task Description	GCID Labor ($)	GCID Expenses ($)	Travel ($)	Consultants ($)	Direct Costs ($)	Total Costs ($)
1	Management	40,000		3,000	70,000	20,000	133,000
2	Data Collection	29,000	45,000	3,200	35,000		112,200
3	Coordinate with Other Studies	24,000		1,400	30,000	10,000	65,400
4	Develop Alternatives	17,000		2,000	220,000	22,000	261,000
5	Evaluate Alternatives	10,000		800	332,000	16,000	358,800
6	Implementation Schedule	2,000			32,000	8,000	42,000
7	Cost Estimates	1,000			30,000		31,000
8	ROW/Permitting/Legal	50,000		1,600	4,000	144,000	199,600
9	Final Report	3,000			116,000	10,000	129,000
Total		176,000	45,000	12,000	869,000	230,000	1,332,000

C. Outreach, Community Involvement, and Information Transfer

1. Outreach efforts.

Project Outreach and Benefits: The proposed project is the first step and outgrowth of the BWMP and is tightly linked to this essential initiative. The BWMP has a strong public information and involvement component. During the development of the BWMP, numerous meetings have been and continue to be held, including monthly management meetings of participating water contractors (i.e., Settlement Contractors) with DWR and Reclamation staff, and presentations made. Informational meetings have been and are continuing to be held with Settlement Contractor Boards of Directors, as well as other water users and environmental interest groups to solicit stakeholder input and disseminate information about the BWMP.

Because most of the project encompasses disadvantaged rural communities, outreach efforts would include the economically disadvantaged communities, including extending the benefits of the feasibility study to all tribal entities. By making more efficient use of water, the project would benefit the Bay-Delta ecosystem and all Californians.

2. Training, employment, and capacity-building potential.

Training, Employment, and Capacity Building: Although the project per se does not directly involve training, employment, or capacity building, it does support the ultimate goal of more efficient management of agricultural water supplies. This, in turn, would potentially make more water available for beneficial uses. A more reliable, better managed water supply would help sustain the California economy by accommodating growth in industry and agriculture, including growth in employment opportunities in all economic sectors.

At a minimum, 70 District employees would receive training and have a better understanding of Integrated Water Management.

3. Describe the plan for disseminating information on the results of the project and promoting their application.

Disseminating Information: The proposed project is among the recommendations of the BWMP for more efficiently managing the water supply, improving water quality and water supply reliability, and proving additional water for beneficial uses, including ecosystem improvements. The BWMP participants include all of the Sacramento Valley Settlement Contractors, DWR, and

Reclamation. Information developed during this project would be disseminated to these agencies and to the public via the BWMP public involvement process. The ongoing planning effort associated with the development of the BWMP provides a formal framework for disseminating inflow/outflow information. The participants are keenly aware of the need to share this information to ensure successful water supply management at the sub-basin level.

The project files would be stored at GCID's office. A website would be established for the project, affording access of information to all parties. The website would maintain an updated project schedule, dates of upcoming meetings, minutes of meetings, and other project information.

4. Provide a copy of the letter sent to the local land use entity, water district, or other potentially impacted or cooperating agencies notifying them of the proposal.

A copy of these letters are attached.

D. Qualifications of the Applicants, Cooperators, and Establishment of Partnerships

1. Project Manager Resume

O. L. "Van" Tenney, GCID General Manager
B.S., Engineering Mechanics

Van Tenney's 31 years of experience includes 20 years managing utilities and irrigation districts. He has been responsible for customer service, personnel management, engineering operations, system maintenance, and construction of capital improvements. For the Maricopa-Stanfield Irrigation District he administered a $100 million, 5-year capital improvement program to construct a water distribution system. For GCID, he is administering design of the permanent fish screening and river restoration facilities for the Main Pump Station in cooperation with state and federal agencies.

Van has participated in a variety of statewide groundwater and water transfer forums, including CALFED's Water Transfer Advisory Group, CALFED's Conjunctive Use Advisory Team and CALFED's Ag Use Efficiency steering Committee. He is also the current Chairman of the Northern California Off-stream Storage Technical Advisory Committee, and a member of the Glenn County Water Advisory Committee.

Van implemented a major in-lieu recharge program while working for Maricopa-Stanfield Irrigation District in Arizona. This project involved the management of nearly 400 deep-water wells and the development of an inter-agency drought protection program for the cities of Phoenix and Tucson. He has also been involved in numerous water management issues with respect to the protection and enhancement of threatened and endangered species while at GCID.

2. Identify and describe the role of any external cooperators that will be used for this project.

Mark Van Camp, with MBK, would serve as senior reviewer to the project team, providing input to the team and critical review of issues related to salinity control and drainwater recapture and release. He will and evaluate effects of the lower two drainage regulating reservoirs on operation of the CBD.

3. Provide information about partnerships developed to implement the project.

GCID is in partnership with all participants in the BWMP and would disseminate project information through these partnerships. The project is a recommendation of the BWMP and would potentially benefit all parties to the BWMP, thereby strengthening and promoting these partnerships. Formal partnerships have not been developed among the numerous potential benefactors of the project. Development of these partnerships would be part of the implementation of the project.

For example, for the development of a groundwater and Stony Creek surface supply, GCID will need to work closely with TCCA, the Orland Unit Water User's Association, Tehama and Glenn counties, Capay Rancho Water District, and the private landowners using groundwater supplies.

As noted elsewhere, previous GCID projects, particularly those that relate to habitat restoration such as the fish screening project and the refuge water supply project, have been partially funded by a variety of state and federal agencies. GCID has contributed millions of dollars of its own funds for these projects. GCID projects have had broad support among local, state, and federal agencies, local landowners and District customers, and other stakeholders, including conservation groups. Along with CDFG, USFWS, Reclamation, and DWR, it is anticipated that the project would receive local support, including Glenn and Colusa counties, Reclamation District 2047, Princeton-Codora-Glenn Irrigation District, Provident Irrigation District, and Maxwell Irrigation District. GCID fosters such support through effective public participation and outreach programs. Sites for the reservoirs and associated conveyance systems would be purchased or leased, as needed, from willing parties. The District's legal counsel, DeCuir and Somach, would address any project-related land ownership and water rights issues. Again, development of these partnerships would be part of the implementation of the project.

E. Costs and Benefits

1. ***Budget summary and breakdown. Provide a detailed budget that includes the following line items. (Indicate the amount of cost sharing for each element as well as direct and indirect costs):***

   The estimated project cost is $1,332,000, and the allocation of costs by task is shown above in Table 1. The budget costs and a break down of the project cost as requested by CALFED is shown in the attached Breakdown Worksheet.

2. ***Budget Justification. Provide a brief explanation for the labor costs (including consultants), equipment, supplies, and travel included in the budget.*** The costs for the pre-design effort include the pre-design of three project components representing less than 1 percent of the total estimated for a project should all proposed project components be constructed. Public outreach with neighboring water users would be critical and time consuming in regards to groundwater use and reducing peak flows in CBD.

3. ***Benefit Summary and Breakdown.***

   More instream flows, improved timing, and the project environmental benefits cannot be proven at this time. GCID anticipates that a successful execution of this proposed project would substantially assist CALFED in meeting the goals of reducing the demand on the Sacramento River during March, April, May, October, November, and December under all water-year scenarios. In addition, the proposed projects, coupled with other proposed projects within the area, would provide even greater benefits both to the North State as well as needed in-stream flow requirements. The purpose of this feasibility study would be better quantify the project, its costs and benefits, and to develop an implementation plan for future project phases. For example, the development and use of groundwater in Northern California is controversial and would need to be addressed with Glenn and Tehama counties, private groundwater users, and numerous sister districts. However, we believe that it may be possible to look at the surface, drainage, and groundwater supplies in a holistic approach that would benefit all. Should the project proceed, GCID believes we could improve the quality of the drainwater discharged to the CBD. However, the answers are unknown at this time and parties are reluctant to assign a monetary benefit.

4. ***Assessment of Costs and Benefits. Include an assessment that summarizes the costs and benefits of the proposed project. The assessment shall adhere to the following general guidelines:***

   GCID is currently unable to quantify costs and benefits.

Budget Summary

Item	Amount	Units	Qty	Total Cost	Units	Life (Years)	Present Value	Local Share ($)	CALFED Request ($)
a. Salaries and Wages									
GCID Employees	8,000	$/Month	22	176,000			176,000	$176,000	$0
b. Fringe Benefits	***(None - no direct cost included with this project)***								
c. Supplies	***(None)***								
d. Equipment									
Flow measurement	$45,000	$	1	$45,000			45,000	$45,000	$0
equipment									
e. Service or Consultants									
Engineering-CH2M HILL	$869,000	$	1	$869,000			$869,000	0	$869,000
f. Travel									
Mileage/Per Diem	$12,000	$	1	$12,000			$12,000	0	$12,000
g. Other Direct Costs including planning, design, construction, maintenance, etc.									
Review- MBK & others	$55,000	$	1	$55,000			$55,000	0	$55,000
Right-of-Way/Legal	$125,000	$	1	$175,000			$175,000	0	$175,000
Somach, Simmons, & Dunn									
h. Total Estimated Costs; total items (a through g)									
							$1,332,000	$221,000	$1,111,000